

At the anniversary dinner, held on Saturday evening, the new German Ambassador (Prince Lichnowsky) and Prof. Metchnikoff were among the guests. In proposing the toast of "The Royal Society," Sir Rickman Godlee, president of the Royal College of Surgeons, dwelt upon the relations of the society to medicine. After responding to the toast, Sir Archibald Geikie proposed the health of the German Ambassador, and pointed out that this was the first public dinner that their guest had attended since he arrived a few weeks ago.

In the course of his reply, Prince Lichnowsky remarked:—

"Of all bonds that unite nations none are stronger than intellectual sympathy, and nothing is more apt to promote a real and lasting understanding between nations than the common struggle against darkness, ignorance, and misery. From time immemorial a close connection has existed between the intellectual leaders of our two great countries. Newton laid the basis of the modern development of physical science in Germany. Carlyle's work on Frederick the Great is a standard work, unrivalled, and of the works of all foreign historians the most popular in Germany. Hume was the predecessor of Kant and Schopenhauer, and I do not believe that in any country in the world are Shakespeare and Byron more fully appreciated or deeply understood than in Germany. I am confident that this close intellectual connection will in the future as in the past be a powerful help to the efforts of all those who work for the establishment of good understanding and harmony between our two kindred peoples."

Prof. Metchnikoff replied to the toast of "The Guests," in a speech in which he referred, in appreciative terms, to the influence the society exerted upon scientific progress, and the recognition it gave to the merits of men of science in many parts of the world. He cited particularly the case of Mendeléeff, who, though refused admission to the St. Petersburg Academy of Science, was elected a foreign member of the Royal Society.

NOTES.

In reply to a question asked in the House of Commons on Monday, the Prime Minister stated that he feared the Government will not be able to find time to pass the Mental Deficiency Bill this session, but that the Home Secretary hopes to reintroduce the Bill early next session embodying the amendments made by the Standing Committee. The pledge that the Bill would be passed this session is thus held to be of no account. That Parliamentary exigencies should cause the jettisoning of the Bill is greatly to be deplored. Men of science know with a certainty that arises out of their qualifications that the problem of the feeble-minded and mentally deficient does not stand still. Its urgency caused the appointment of the Royal Commission in 1904; the report emphasised the necessity for immediate action in 1908; yet December of 1912 finds the subject shelved and put on one side. *The Times* has opened its columns to various expressions of feeling on this occasion, but many

people who do not see its files will share in Sir Edward Fry's "distress and dismay" at a postponement which is "little short of a national calamity," and agree with the long list of distinguished signatories in the issue of November 28, that "this neglect is causing untold suffering to thousands of feeble-minded individuals who, because it is impossible under the existing law to train them and care for them, become inebriates, prostitutes, criminals, and paupers." Nor is it only these persons themselves with whom we need concern ourselves. They leave behind them a new generation of mentally and physically degenerate children, increasing daily in number, to be a shame to our national life, and a menace to our racial superiority.

THE High Commissioner for the Commonwealth of Australia has received official information of the arrangements that are being made for the visit of the British Association to Australia in 1914. A Federal Council has been formed, under the patronage of the Governor-General, with the Prime Minister as chairman. The members of the association will arrive at Fremantle on August 4, Adelaide August 8, Melbourne August 13, Sydney August 20, and Brisbane August 27, and those returning home by the shortest route will reach London on October 11. The Commonwealth has granted 15,000*l.* to be handed to the British Association by the High Commissioner to cover the passages of not fewer than 150 official representatives, including selected Dominion and foreign men of science. A special invitation has been issued to Sir Charles Lucas, formerly head of the Dominions Department of the Colonial Office. Dr. Rivett has been appointed organising secretary, and will visit London next year. The Governments of the several States offer special facilities for prolonged visits of men of science interested in special problems in Australia.

A VERY interesting tract of wild country has just been vested as a nature reservation in the National Trust for Places of Historic Interest or Natural Beauty. This is Blakeney Point, in Norfolk, a tract of about 1000 acres, consisting of three and a half miles of the shingle spit, with the sand-dunes and salt-marshes protected by it; the frontage on the North Sea is three and a half miles, viz. the end of the spit. A remarkable feature of the tract is the series of terrains instituted by the silting process, and the resulting formation of series of vegetations. Norfolk generally is one of our richest counties in rare flora and fauna. Blakeney Point is a typical area of the county in this regard. It possesses the four chief species of *Statice* (sea lavender), the very rare *Mertensia maritima* (oyster plant), and the fine shrub, sea-blite, *Suaeda fruticosa*, which grows in great profusion. It is famous for its birds, protected for some years now by the Wild Birds' Protection Society. The oyster-catcher, ringed plover, common and lesser tern breed freely; the latter and various gulls are extraordinarily abundant. Being a sort of "hook" in the North Sea, the point receives interesting stragglers, seals, sharks, and last year a whale. Salt-marshes such as these are rich in insect fauna. The gift is due

to the generosity of the Fishmongers' Company, and some private individuals. *The Times*, from whose report we quote, well says "it is hoped that with Blakeney Point a satisfactory beginning of the establishment of 'national reserves' may be made in England."

THE death is announced, in his seventy-ninth year, of Sir Charles Whitehead, an authority in agricultural matters. He was an active member of the council of the Royal Agricultural Society from 1870 to 1898, was chairman of the botanical and zoological committee of the society, and wrote much in its *Journal*. He was a vice-president of the society from 1885-1907. From 1893 to 1897 Sir Charles Whitehead served on the Royal Commission on Agriculture, and from 1884 to 1887 he advised the Agricultural Department of the Privy Council Office, when he was appointed agricultural adviser—the first in this country. He was afterwards transferred to the Board of Agriculture as technical adviser. Among his numerous contributions to the literature of agricultural science may be mentioned "The Agriculture of Kent," his leaflets on insects and fungi, and his reports on the Hessian fly, the means of checking potato disease, and on the attack of the diamond black moth. He was a fellow of the Linnean, Royal Geographical, and Geological Societies.

THE death is announced, at the age of ninety years, of Dr. Robert Fletcher, the medical bibliographer. Dr. Fletcher was born at Bristol, and qualified as a member of the Royal College of Surgeons in 1844. Later he took the degree of M.D. at Columbia University. He inaugurated the Army Medical Library at Washington, U.S.A., and, in association with Dr. J. S. Billings, the present head of the New York Public Library, he compiled and edited the index catalogue of the library of the Surgeon-General's Office, Washington, and was entirely responsible for some of the volumes. With Dr. Billings, too, he compiled the "Index Medicus," which was later revived and taken over by the Carnegie Institution, when it was edited by Dr. Fletcher. Since 1880, thirty-two folio volumes of the index have been issued. Dr. Fletcher wrote also papers on anthropology and folklore. He formerly lectured on medical jurisprudence at one of the Washington schools, and afterwards gave an annual course of lectures on the subject at the Johns Hopkins Hospital School at Baltimore. The council of the Royal College of Surgeons of England in 1910 conferred upon Dr. Fletcher the honorary medal of the college for "distinguished labours eminently conducive to the improvement of natural knowledge and the healing art."

MR. T. FRANCIS CONNOLLY, of the Solar Physics Observatory, South Kensington, has been appointed an assistant-inspector of scientific supplies at the India Stores Department, Lambeth.

THE Physical Society's eighth annual exhibition, to be held on Tuesday, December 17, at the Imperial College of Science, South Kensington, will be open in both the afternoon (from 3 to 6 p.m.) and in the evening (from 7 to 10 p.m.). Mr. S. G. Brown will

give a discourse at 4.30 and again at 8 p.m., on some methods of magnifying feeble signalling currents. About thirty firms will exhibit instruments and other apparatus.

REMAINS of a human skull and mandible, considered to belong to the early Pleistocene period, have been discovered by Mr. Charles Dawson in a gravel-deposit in the basin of the river Ouse, north of Lewes, Sussex. Much interest has been aroused in the specimen owing to the exactitude with which its geological age is said to have been fixed, and it will form the subject of a paper by Mr. Dawson and Dr. Smith Woodward to be read before the Geological Society on December 18.

A COURSE of twelve Swiney lectures on geology in connection with the British Museum (Natural History) will be delivered by Dr. T. J. Jehu, in the Lecture Theatre of the Victoria and Albert Museum, South Kensington, on Mondays, Thursdays, and Saturdays, at 3 p.m., from Saturday, December 7, to Saturday, December 21 (inclusive), and from Saturday, January 4, to Monday, January 13 (inclusive). The subject of the course is "The Record of Life as revealed in the Rocks." Admission to the lectures is free.

ON Friday last, November 29, Mr. Edgar A. Smith, assistant-keeper in the zoological department of the Natural History Museum, was, in view of his approaching retirement, presented by the director, Dr. L. Fletcher, F.R.S., on behalf of the subscribers, including many of his colleagues and other friends, with a tea and coffee service, a drawing-room clock, and a pair of field-glasses. Mr. Smith joined the staff of the museum in 1867, and has served the trustees for the exceptional length of time of forty-five years; at their special request he has consented to continue his duties up to the end of March next.

WE are informed that the "Cecil" medal and prize of the Dorset Field Club for 1912-13 will be awarded for the best paper on the known sources of supply of petroleum oil and its various products; its advantages or disadvantages compared with the future price, illuminating power, heat and energy of coal by land, sea, and air. The competition is open to any person who was between the ages of eighteen and thirty-five on May 9, 1912, and either was born in Dorset or had on May 9, 1912, resided in the county for the previous twelve months. Further particulars may be obtained from Mr. H. Pouncy, *Dorset County Chronicle* Office, Dorchester.

As a result of a suggestion contained in a paper on the nomenclature of alloys, read by Dr. W. Rosenhain before the Institute of Metals in January last, a committee consisting of representatives of the Institute of Metals and Allied Societies has been appointed under the name of the Nomenclature Committee, and will shortly hold its first meeting. Another new committee has been appointed by the council for the purpose of assisting the Dominions Royal Commission in the inquiry into the question of the supply of non-ferrous metals and ores in this country. A report dealing with this subject is being prepared by the committee, of which Prof. T. Turner is the honorary secretary.

THE following are among the lecture arrangements at the Royal Institution, before Easter:—Sir James Dewar, a course of six experimentally illustrated lectures, adapted to a juvenile auditory, on Christmas lecture epilogues: December 28, alchemy; December 31, atoms; January 2, light; January 4, clouds; January 7, meteorites; January 9, frozen worlds; Prof. W. Bateson, six lectures on the heredity of sex and some cognate problems. Prof. H. H. Turner, three lectures on the movements of the stars: the nebular hypothesis; the stars and their movements; our greater system. Mr. Seton Gordon, two lectures on birds of the hill country. Prof. B. Hopkinson, two lectures on recent research on the gas engine. Mr. W. B. Hardy, two lectures on surface energy. Sir J. J. Thomson, six lectures on the properties and constitution of the atom. The Friday evening meetings will commence on January 17, when Sir J. J. Thomson will deliver a discourse on further applications of the method of positive rays. Succeeding discourses will probably be given by Prof. J. O. Arnold, Mr. G. M. Trevelyan, Sir John Murray, Prof. A. Gray, Mr. S. U. Pickering, Mr. C. T. R. Wilson, the Hon. R. J. Strutt, Dr. A. E. H. Tutton, and other gentlemen.

THE influence of Libyan migrations on the people of the Nilotic delta and the southern shores of the Ægean is now generally admitted. A useful collection of facts illustrating the historical aspects of the question from Egyptian and other sources is made in an article by Mr. Oric Bates under the title of "History of the Eastern Libyans," contributed to *The Cairo Scientific Journal* for August last. He emphasises the constant protest by these people against foreign dominion, and their failure to amalgamate with their European invaders. With the Carthaginians they certainly mixed to some extent; but there was no conspicuous intermixture until Arab times, when there arose the great Berber-Arab dynasties of the Atlas, and eventually the Negro-Berber-Arab Songhay empire in the south-west. Fierce, predatory, and impatient of foreign dominion, yet incapable of ruling themselves, they were a race without a mission until they became sufficiently united with the Arabs under Islam to give strength and weight to the Mohammadan dynasties of Africa and Spain.

THE archæological department of the Geological Survey of Canada has begun a systematic study of the archæology of the whole of the Dominion. Messrs. Harlan I. Smith and W. J. Wintenberg conducted reconnaissances in the Ottawa Valley, Nation Valley, and neighbouring regions. Cave dwellings were found in the Laurentian Mountains near the north side of the Ottawa River containing pottery of an Iroquoian type, and also village sites probably of Algonkin origin; they are all small, and are generally near the streams on camping-places suitable for canoe-parties. They also explored some large Iroquoian village sites near the headwaters of the Nation, which are usually on the top of low hills near a spring or small stream, and thus differ from those previously mentioned. Charred corn (maize) and beans are found; thus the people were

agricultural. Stone arrow-points are exceedingly rare, and those made of antler are uncommon. The grooved axe has not been found; even celts are rare, but fragments of pottery and bone awls are common. A number of burials, usually unaccompanied by artifacts, have been found; the skeletons show that the people suffered from bone diseases, and that there was a considerable infant mortality. They were apparently all of one physical type. Messrs. G. E. Laidlaw and W. B. Hicker have also done useful archæological work, as have two volunteers, Dr. T. W. Beeman and Mr. C. C. Inderwick. On a previous occasion we directed attention to the advantage that would be gained by Canadian archæology by the appointment of Mr. Smith as government archæologist, and now we congratulate him on having secured so many zealous co-workers.

AMONG many articles of special interest in the Christmas issue of *Chambers's Journal* is one by Mr. Waldemar Kaempffert on "Eugenics and What it Means." Some striking instances are given of the way in which the mental and physical characters of a human being are reproduced again and again in his descendants. Particulars of 1200 descendants of Max Jukes, a criminal fisherman born in 1720, are compared with statistics of the 1394 descendants of Jonathan Edwards, the distinguished American. The facts obtained by Prof. Karl Pearson and other workers show the vital importance of dealing promptly with the question of the mentally defective. It is urged that the manner in which family traits, good and bad, are inherited should be studied, and that "we must prevent the perpetuation and increase of a stock which we know is a menace to the nation."

LEMURS and their relatives form the subject of a popular article by Miss S. S. Müller in *The Museum News* of Brooklyn. The author appears to be unaware that pottos (*Perodicticus*) occur in Uganda, as well as in West Africa.

IN the November number of *The Annals and Magazine of Natural History* Dr. Ridewood states that certain specimens in the Natural History Museum collected in the Antarctic during the voyage of the *Erebus* and *Terror* in 1841 or 1842 are apparently referable to the genus *Cephalodiscus* (an organism on the border line between vertebrates and invertebrates), which was named in 1876 on the evidence of examples brought home by the *Challenger*. They seem referable to *C. nigrescens*, described by Sir Ray Lankester in 1905.

No fewer than five different authors, Messrs. Griffini, Heller, Hiltzheimer, Lotichius, and Schwarz have recently published independent communications on the members of the quagga and zebra group, and it is not a little remarkable how their conclusions differ. Mr. Schwarz (*Arch. Naturges.*, vol. lxxviii., Heft 7, p. 34) considers that *Equus quagga* should include the *burchelli* group, and also that certain races of the former, such as *E. greyi*, which have been described from the Cape, are invalid, while it is also considered that *E. greyi* is not generically separable from the other. The latter is, however, referred to a new

genus by Dr. Hilzheimer (*Abh. Senckenberg Ges.*, vol. xxxi., p. 85, under the preoccupied name *Megacephalon*, while the *E. burchelli* group is kept distinct from *E. quagga*. Mr. Heller (Smithson. Misc. Collect., vol. lx., No. 8, p. 1) also generically separates Grévy's zebra, as *Dolichohippus*. Mr. Griffini's work was reviewed in *NATURE* of November 28 (p. 358); the remaining publication does not demand further notice.

An interesting research on the sensory perceptions of the fowl tick (*Argas persicus*) has been carried on in the Quick Laboratory, Cambridge, by Dr. E. Hindle and Mr. G. Merriman, who publish their results in *Parasitology*, vol. v., No. 3, 1912. The reaction of the ticks, in all stages, to light is negative; they are also sensitive to pronounced differences in the intensity of illumination, selecting the darker places to rest in. Occasionally this "negative phototropism" is masked, because the ticks are decidedly attracted to a source of heat. They bring as much as possible of the surface of their bodies into contact with surrounding objects. Experiments with vapours showed that the sense of smell is very well developed, and observations on ticks that had suffered amputation of the terminal segments of their front legs proved that the chitinous sac, there situated, and known as "Haller's organ," is olfactory in function. The impressions received through this organ, together with the positive reactions to heat and contact, are believed to be of service to the ticks in enabling them to find appropriate hosts.

We have received a report of the Amphipoda of the Scottish Antarctic expedition (*Trans. Roy. Soc. Edinburgh*, xlviii. (1912), pp. 455-520, two plates), by Prof. Charles Chilton, of Canterbury College, New Zealand. The collection contained fifty-six species from Antarctic or sub-Antarctic seas. The great majority of these were already known, but nine new forms are established. It appears that many species range around the globe in sub-Antarctic seas, and the author also directs attention to the similarity or identity of some Arctic and Antarctic species. What interpretation is to be put on this "bipolarity"? Prof. Chilton points out that a species which occurs both in the Arctic and the Antarctic is not always entirely absent from the tropics, but exists there in deeper waters. Moreover, the tropical or temperate form is sometimes so much smaller than the polar one that it has been reckoned as a separate species. For it must be noted that, for some reasons not altogether understood, many Amphipods find their optimum environment near the Arctic and Antarctic regions, not only occurring there in greatest abundance, but attaining a size far larger than that usual for similar or identical species in warmer seas.

A USEFUL list of British lichens, published by Messrs. Dulau, at 1s. net (post free 1s. 1d.), has been compiled by the secretary of the Lichen Exchange Club, and contains the names of more than 1200 species, belonging to 142 genera. This list will be of service to collectors, but the club intends shortly to publish a census catalogue and also "An Easy Account of British Lichens," of which the latter will doubtless be of greater utility to general students.

The enterprise of the Lichen Exchange Club is greatly to be commended, as it is likely to lend an impetus to the study of this difficult group of plants among field botanists, and the issue of these handy and inexpensive compilations is well-timed, following as they do the recently completed monograph of the lichens in the British Museum herbarium.

THE synoptic weather maps of the North Atlantic and adjacent continents during the interval of November 4-14, shown on the first issue of the meteorological chart for December by the Meteorological Office, are of more than usual interest. During the first few days atmospheric disturbances occupied the region from Greenland to the Azores and Canary Islands, but subsequently the maps show that a remarkable development of high pressure took place, and "a vast anticyclone ruled from the United States across the Atlantic and Europe to the greater part of Siberia," and much fine weather was experienced. The barometric pressure over central Siberia exceeded 31½ in. on two days, and was down to 28¾ in. near Iceland. In the week commencing with November 10 a more wintry type of weather set in, with a large anticyclone central about 52° N., 22° W., and depressions on the Newfoundland side.

A USEFUL paper, entitled "Data of Heavy Rainfall over Short Periods in India," has recently appeared in the *Memoirs of the Indian Meteorological Department* (vol. xxi., part iii.). The information is arranged in chronological order showing (1) daily falls exceeding 10 in. in each of the fourteen chief political divisions for the period 1891-1911, and also the amounts recorded on the preceding and following days, with a supplementary table giving from fragmentary sources records of heavy rainfall prior to 1891; (2) bursts of heavy rain lasting a few hours. No general summary is given of the maximum daily falls, but the figures are astounding; records of 20 in. and upwards are not uncommon, with considerable falls on the previous and following days. At Cherrapunji (Assam) 40·8 in., in the United Provinces 35 in., and in the Punjab 32·4 in. are quoted within twenty-four hours. This valuable information has been published to meet demands for trustworthy data for use in irrigational and commercial undertakings.

THE American journal *Good Lighting* publishes in its October number a well-illustrated article, by Messrs. C. L. Law and A. L. Powell, on small store lighting in that country, a subject on which the authors read a paper at the Niagara Falls meeting of the Illuminating Engineering Society in September. More than 800 small stores in the less prominent streets of New York and neighbouring cities were investigated, and the authors embody their results in a table showing the maximum, minimum, and average watts per square foot of floor area, based on the use of tungsten filament lamps with glass reflectors. They conclude by recommending a definite number of watts per square foot for each type of store. Although the internal arrangements of an American store differ considerably from those of an English shop, the recommendations are of importance to English illuminating engineers, and we reproduce them:—Art

store, 1'3; bakery, 0'8; barber, 1'2; cigar, 1'4; clothing 1'5; confectionery, 1'0; delicatessen, 1'1; drug, 1'2; dry goods, 1'0; florist 1'1; grocery, 1'0; haberdashery, 1'7; jewellery, 1'6; meat, 0'9; millinery, 1'3; music, 1'1; restaurant, 1'1; shoe, 1'0; stationery, 1'0; wine 1'0 watt per square foot of floor.

THE October issue of *Science Progress* contains a full account, by Mr. W. A. Davis, of the experiments on the chemical effects of light, to which so much attention has been directed in recent years. The changes produced may be of some half-dozen types. The most important of these is probably a reciprocal oxidation and reduction, but isomeric and polymeric change, synthesis and hydrolysis are also effected in many cases. These changes are somewhat irregular in their occurrence; thus the nitrobenzaldoximes undergo isomeric change on exposure to light, whilst the parent substance remains stable; again, maleic acid is converted into fumaric acid by light in presence of bromine, but the other halogens do not produce this effect. One of the most striking changes is that of *allo*-cinnamylidene acetic acid,



which, when dissolved in benzene with 3 per cent. of its weight of iodine, actually sets within three minutes on exposure to light, owing to the conversion of 80 per cent. of the acid into a less soluble isomeride; in the dark no change occurs in six days.

WE have received from the Carnegie Institution of Washington a monograph on the conductivity, &c., of aqueous solutions of salts and organic acids, by Prof. H. C. Jones. As this summarises the data that have been published in a series of American papers, it will be of considerable value to those who have to refer to the figures now collected. In the original papers the data for the range 0° to 35° C. were all issued separately from those from 35° to 65° C.; in such cases the advantages of publishing in bulk rather than in successive portions cannot be emphasised too strongly. The present publication is therefore doubly welcome.

MESSRS. T. C. AND E. C. JACK have added another dozen volumes to their "People's Books," which are published in cloth binding at 6d. net. The additions include a volume by Dr. T. G. Bonney, F.R.S., entitled "The Structure of the Earth," in which he gives a very brief statement of the problems and methods of geology, and a popular account of the disintegrating forces at work modifying the earth's crust, of volcanoes, land movements, and the life-history of the earth. In "Hypnotism and Self-Education," Dr. A. M. Hutchison writes on the present-day position of medicine as regards diseases which demand healing other than that which can be given by drugs. A volume by Mr. William Hall, R.N., on "Navigation," is intended to initiate the reader "as a sort of honorary member in the great company of seafarers," and expounds simply such subjects as dead reckoning and astronomical navigation. Mr. R. G. K. Lempfert, superintendent of the Forecast Division of the Meteorological Office, describes in his volume "Weather Science" how meteorological observations

are made and their relation to the changes going on in the atmosphere, and explains what can be learnt by combining the results of observations taken at a number of stations. Two other of the books—"Marriage and Motherhood," by Mr. H. S. Davidson, and "The Baby: A Mother's Book," by a Mother, provide in simple words the information with which every wife and mother should be familiar.

IN view of the increasing importance of the study of public hygiene, the syndics of the Cambridge University Press have decided to publish a series of volumes dealing with the various subjects connected with public health. The provisional lists of subjects, all of which will be treated by experts, include:—The causation of tuberculosis, house-flies and disease, bacteriology of foods, tropical hygiene, sewage disposal, water purification, school hygiene, sound and unsound foods, domestic sanitation, chemical analyses of foods, &c. It is intended that the whole series shall appeal not only to medical men but also to those engaged in the study or administration of public health at home or abroad. The series will be under the general editorship of Dr. G. S. Graham-Smith and Mr. J. E. Purvis.

MESSRS. KEGAN PAUL, TRENCH, TRÜBNER AND CO., LTD., are about to publish a work on the "Theory of Evolution," by the Rev. K. Frank, S.J., with a chapter on ant guests and termite guests, from the pen of Father E. Wasmann, S.J. The work has been translated from the German by Mr. C. T. Druery, and will be illustrated.

OUR ASTRONOMICAL COLUMN.

RADIUM IN THE CHROMOSPHERE.—In No. 454 of *The Observatory*, Dr. Dyson replies to the views expressed by Mr. Evershed and Mr. Mitchell concerning his suggestion that there is some evidence for the existence of radium among the elements spectroscopically disclosed in the solar chromosphere.

His contention is that the chromospheric spectrum is an enhanced-line spectrum, and that before accepting any coincidence of Fraunhoferic and chromospheric lines as evidence of identity of source, the behaviour of any line in question in the spark should be taken into account. On these grounds he questions Mr. Mitchell's identifications of the lines $\lambda 4699\cdot 52$ and $\lambda 4533\cdot 34$, with lines given by Rowland. Other cases are against the radium identifications, however, and Dr. Dyson expresses the hope that the question will receive attention at future eclipses, and that the radium line at $\lambda 5813\cdot 9$, referred to by Mr. Evershed, will be looked for.

OBSERVATIONS OF JUPITER.—Despite the unfavourable conditions of altitude and weather some interesting observations of Jupiter were made during May-July at the observatory of the French Astronomical Society, and the results, with drawings, are now published in the November number of *L'Astronomie*.

The north polar region was much darker than the neighbouring region during May, but later it cleared until its hue was similar to the north temperate zone. Great changes of form and relative movement were observed in the great southern perturbation, and about the middle of July the displacement was at the rate of about 1000 kms. per day; these changes are illustrated by curves and drawings. Later observa-